



# Sloan Career Cornerstone Center

## Profiles of Mechanical Engineers



**Noah Loren**

**Applications & Technology Services Engineer  
Detroit Diesel Corporation  
Detroit, MI**

### **Education:**

BS, Mechanical Engineering, University of Rochester

### **Job Description:**

Applications and Technology Services Engineer, working with distributors, original equipment manufacturers, and end-users to solve installation and service problems with engines. Also develops applications to meet special customer requirements.

### **Advice to Students:**

"Seniors in high school should take science and math, as much as you can. If you can get calculus in high school, take it. Even if it's just a brief course or doesn't go in too much detail. Take physics, chemistry, and a lot of math."

### **Comments:**

Noah feels that he was well prepared in college, but his job calls for the ability to work in teams and a blend of hands-on and CAD skills that one may need to learn on the job. He urges students to look into co-op programs, for that experience has helped him to get a job and to adapt quickly.

### **Video Transcript 1:**

"I answer calls from customers or distributors about service problems with engines. Somebody might call up and say, well, I've got this engine and it's doing this and I have no idea why it's doing that and spewing out metal parts out of the exhaust or something. We'll sit down and figure it out and see how we can help them in the field."

### **Interview:**

Loren: My job includes trips to see customers, to help them to service the engine or to perform tests on the coolant, oil, turbo-charging or fuel systems, to figure out what's wrong and to see how we can help them. In the applications engineering area I deal directly with OEMs, the Original Equipment Manufacturers who use our engines in their machinery or equipment. We work closely with them on installations, and sometimes we design special fittings, mountings, or engine parts to make sure they can install our engine in their products.

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**Q: First, if you could tell us your name, your job title, where you work, your age? And how long you've been here?**

Loren: OK. My name is Noah Loren. I work in Selected Products Engineering. I'm a Technical Service/Applications Engineer. I've been here three weeks, and I'm 23.

**Q: Is this your first job?**

Loren: This is my first job out of school. I graduated about a month and a half ago.

**Q: Coming fresh out of school and just being here three weeks what would you say your first impression was then?**

Loren: I had a little bit of a benefit in terms of working here fresh out of school because I was a summer intern here last summer. So I wasn't coming totally cold turkey. But it's a little overwhelming at first, just trying to figure out what's going on, what your responsibilities are, the kind of things you're expected to do, expected to know. Sometimes there's a language barrier between your co-workers and yourself, depending on what terms were used in your education. So you have to sort of figure out at first what people are talking about. And then things start clicking after your first couple of days.

**Q: Tell me a little bit about what you're doing?**

Loren: Well, the technical-service part of my job is basically I answer calls from customers or distributors about service problems with engines. Somebody might call up and say, "Well, I've got this engine and it's doing this and I have no idea why it's doing that and spewing out metal parts out of the exhaust or something." We'll sit down and figure it out and see how we can help them in the field. It also includes making trips out to see the customers, to help them either service the engine or perform tests on the engine. Like, we'll test coolant and oil and the turbo-charging system or fuel system and figure out what's wrong for them and see how we can help them remedy the situation. The applications-engineering part of my job is basically we deal directly with OEMs, which are Original Equipment Manufacturers, who make all different kinds of machinery or equipment and that use our engines. And what we do is we work closely with them, developing installations of our engines into their equipment and providing either special brackets or designing new flywheels or new mounting systems, so we can help them install our engine in their products. There's about six or seven of us. About half of us do technical service and half of us do applications, and usually, some of us do a little bit of both. Since I'm new, I'm going to be doing a little bit of both. And we work in groups. There's a lot of teamwork involved because, obviously, every different perspective brings new light to a problem and a new way to solve it. So we always usually work in groups, in teams. Everybody in my group has a mechanical engineering background.

**Q: What technical skills did you learn in college that you find it very useful now or did you not know?**

Loren: In college, I guess, I had the benefit of when I got to school, I had a lot of mechanic skills and training that I had done in high school and before that, due to my own interests. In

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school, I guess I learned a lot about, in my lab classes, assembly and manufacturing. A little bit about technical writing and drawing. It's always important. It's always good to know a little bit about screws, nuts, and bolts. You think it's really simple stuff that, you know, "Oh, everybody knows that," but there are a lot of different things out there that are always good to know.

**Q: Do you do a lot in theory?**

Loren: I deal mostly in actual applications and physical things. I don't do a lot of theory analysis. I do a lot of, like, somebody will call up and say, "Well, I need a flywheel that measures this-by-this to bolt up to this transmission." And we'll sit down. We'll draw one up, and figure out the cheapest way to manufacture it and get working on it and help the customer out in that way.

**Q: What type of systems do you work on? In terms of computer systems or machinery?**

Loren: Most of our work we do on a PC, a lot of spreadsheet work. We use a little bit of CAD to do drawings. But the way Detroit Diesel is set up is, there's usually a different department for each aspect. Like there's a drafting department, so that if you need to produce a drafting or drawing, then you'll contact somebody in that department and you work closely with them, developing it. Each group has their own specialized skills.

**Q: Did you know all along what you were going to do or were there surprises along the way?**

Loren: I pretty much knew a while ago that I wanted to be in this industry. I didn't know that I would end up in the diesel-engine field. But I always wanted to be in engine development, and I guess you never know what opportunities are going to come along, and this was a really good opportunity for me and I grabbed it and I ended up in diesel engines.

**Q: Are there other skills, other than the technical ones that you talked about, that you find really helpful, that you learned when you were in college?**

Loren: Definitely, interpersonal skills, communications skills, being able to work in a group. It's very important to be able to develop that skill because everything you do in the professional world is going to be group-oriented, whether you're making a presentation with another co-worker or you're working with your boss on something. It's always good to be able to communicate clearly with others and be able to work in a group and not feel threatened or uncomfortable working with others, because that's the way things work.

**Q: Do you think that a function of your field is that you have to be willing to go anywhere?**

Loren: I definitely think there are different regions of the country that are known for their different industries. Like the Bay Area of California is known for the computer industry. Detroit is obviously the motor city, known for its automotive and engine industry. The East is known for its finance. So I guess if you want to be in a certain field, you have to be willing to relocate,

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obviously a location where that field is prominent; if you live in the middle of the desert, in the west, you're not going to be working at too many manufacturing plants for cars or engines. You definitely have to be flexible in terms of where you're willing to go.

**Q: What's it like coming to a whole new city, knowing you're going to be there for a while, starting a new career and that whole thing?**

Loren: It's tough at first, like the first couple of days I was here, it was sort of like figuring out where things were and finding a place to live and trying to meet people. But once you settle in at work, you meet other people your age or with your similar interests and you just sort of get a feel for it. It's a lot like being a freshman at college. It's like you're overwhelmed by the size and amount of things going on, and it just takes a little while to figure it out, but it all comes to you.

**Q: Do you have a mentor?**

Loren: Yes and no. No, I don't have an assigned mentor, but my boss is sort of like my mentor by default in terms of sort of helping me learn things and helping me figure things out. So, he's been really good in that respect.

**Q: Go through now how you decided to be an intern, coming here, and how that led to a full-time position.**

Loren: OK. I guess the one mistake I made at school was I thought that if you weren't at least in your junior year that you couldn't get a good internship. That's a false assumption that I made and that a lot of other students make because you figure, "Well, I've only had my calculus in this, and I don't really know enough to do anything." But that's not true. A lot of companies like Detroit Diesel, for one, would take somebody who's on an engineering path after their freshman or sophomore year. You would work in the engineering lab or in the manufacturing area and you would learn hands-on about the products. Not necessarily doing hardcore engineering, but learning about what's going on. I guess after my junior year or during my junior year, I decided that I wanted to get an internship for that summer after my junior year. So, in October or November, I started investigating possibilities and locating companies, making contacts, figuring out different places that have programs. And then you just send out a lot of resumes and a lot of cover letters and follow them up with phone calls. A lot of people think, "Well, I'll send it out and they'll call me." But you really have to call them and make things happen for yourself. It's really important. So, I sent out resumes and got nibbles and made phone calls and got the internship, and then I came here and worked for the summer for a few months, and towards the end of the summer I started talking. I'd asked my boss, I said, "You know, when I graduate next year, I would love to work here full-time. How do I go about setting up that thinking and process with Management?" And he said, "Well, you just tell this person and they'll set up some interviews for you during the summer that you're there, so that you don't have to travel back during the year." And I interviewed last August and I followed up during the year and a few months later and kept following up. Then the companies decide they want to hire starting probably in April or March. Just keep on them and things work out.

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**Q: What do you wish, now that you have all three weeks experience, is there anything you see that you're going to be doing on a day-to-day basis, or part of your job, that you didn't think would be, in school?**

Loren: I'd say I wish I'd had maybe a little bit more CAD experience than I had in school. Other than that, I'm really very pleased with what I was exposed to in school and what I learned and what I was taught. I don't really think that there are any skills that I didn't get that I need now.

**Q: Do you have a career path outlined?**

Loren: Obviously, I want to be where I am right now for a couple of years, and get to learn a lot about the business. And probably in another year, I'm going to go back to school part-time, maybe get an advanced degree, either a business degree or an advanced engineering degree. And obviously in the future, I'd like to have more responsibility in terms of work and that kind of thing. But right now, I'm pretty much just trying to learn as much as I can about the business and do everything that I'm asked to do and do it well.

**Q: What advice would you give to someone who's in college now?**

Loren: I would say make sure that you learn hands-on skills. A lot of people have the impression that engineers sit in a little room, with a computer, and do things on their computer. That's not necessarily true. A lot of it is, you have to know a lot about things that are physical, things that are real. Know how to use tools, and in some cases, be able to work on engines, if that's the field you're in, or be able to work on whatever it is. So, having the hands-on skills is definitely important, and also I can't stress enough the interpersonal communications skills, and I guess just having a lot of patience.

**Q: What about high school?**

Loren: Seniors in high school? Take science and math, as much as you can. If you can get calculus in high school, take it. Even if it's just a brief course or doesn't go in too much detail. But I guess my senior year in high school, I didn't have any calculus and then freshman year in college, it was like getting hit with a brick. So it's always nice not to have that done to you. Take physics, chemistry and a lot of math.

**Q: What's it like working in such a large corporation?**

Loren: It's really sort of deceiving as to how big the corporation is, with how small it feels. All the people are very nice and very personable. People say "Hi" to you. You don't feel like you're a number in a crowd. I came from a relatively small school, about 5,000 students. So this company is probably bigger, twice as big as my school. So it's a bigger environment for me, but it doesn't feel like it's any larger. It still feels very personable. Very comfortable.

**Q: Do you deal with others during the day, other than mechanical engineers?**

Loren: Yes, I deal a lot with engine mechanics and outside suppliers of parts and you name it. I've probably talked to them on the phone a couple of times during the day.

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**Q: Could you tell us any outside hobbies or interests you have?**

Loren: I have been into restoring cars and motorcycles since I was probably about 15. Play ice hockey, basketball. I don't know. All kinds of sports. Mountain bike. Road bike.

**Q: So you probably wanted to be an engineer for the very image?**

Loren: Yes. I'm sort of one of those strange exceptions that knew what they wanted to do from probably when I was 10.

**Q: You're not the exception. A lot of people know that.**

Loren: Yeah?

**Q: And you always knew what area you wanted to get into? Did you explore other areas, just in case?**

Loren: Yes, I interviewed with a lot of companies that did other things. Like I interviewed with companies that were into gas products and power-plant type things, and some other manufacturing, electronics packaging. But I really always just wanted to be in automotive and industrial fields, and this is sort of a dream job for me.

**Q: How long do you think the initial learning curve is when you get out of school? When you're going, "OK, I'm an engineer and I'm doing this now?"**

Loren: Probably six months or a year until you really feel that, "I know what's going on." Because, everything in the quote unquote "real world" is a lot different than school in terms of demands, expectations. So it takes a little getting used to, and also you have to learn the environment you're in. It takes a little while to learn the little things that they expect, like how to type up your report or how to do your presentations. Everybody's different, so it takes a little while to get all that.

**Q: What's the worst aspect of the job?**

Loren: The worst? I don't know if there really is anything bad I can say. I mean I really enjoy just about everything I do. There's nothing I can say really, "I wish I didn't have to do that." So far, it's been great. There's nothing bad I can say about it.

**Q: How about the best?**

Loren: The best is I guess when I get to actually go out into the field and do hands-on stuff because I'm a hands-on kind of person. So I like going out and getting my hands dirty. I also think the technical-service aspect is interesting, because somebody'll call you up with this problem and you have to sit and wrack your brain and try to figure it out. So, it's always a really interesting problem-solving kind of thing. I enjoy that.

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